

Exhibit 2

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OKLAHOMA**

PETER POE, et al.,

Plaintiffs,

v.

GENTNER DRUMMOND, et al.,

Defendants.

Case No. 23-CV-00177-JFH-SH

**EXPERT REBUTTAL DECLARATION OF
DEANNA ADKINS, MD**

1. I have been retained by counsel for Plaintiffs as an expert in connection with the above-captioned litigation.

2. I have actual knowledge of the matters stated in this declaration and have collected and cite to relevant literature concerning the issues that arise in this litigation in the body of the report.

3. My credentials are set forth in my initial declaration filed with the Court at ECF No. 6-3.

4. I have reviewed the declarations of Drs. James Cantor, Michael K. Laidlaw, Angela C.E. Thompson, and Curtis E. Harris. Here, I respond to some of the central points in those declarations. I do not specifically address each study or article cited, or each point made, but instead explain the overall problems with some of the conclusions that the Defendants'

experts draw and provide data showing why such conclusions are in error. I reserve the right to supplement my opinions if necessary as the case proceeds.

TREATMENT PROTOCOLS FOR ADOLESCENTS WITH GENDER DYSPHORIA

5. Defendants' experts suggest that gender clinics routinely provide medical interventions to adolescents without proper mental health assessments and without informing patients and their parents of the potential risks of treatment. I cannot speak to the practice of every gender clinic in the country but both the Endocrine Society Clinical Practice Guideline (the "Endocrine Society Guideline") and the World Professional Association of Transgender Health Standards of Care (the "WPATH SOC") require rigorous mental health assessments and informed consent processes before any medical treatment is initiated. In my experience treating over 600 youth with gender dysphoria during my tenure at the Duke Center for Child and Adolescent Gender Care (the "Duke Gender Care Clinic"), each patient undergoes an extensive psychological assessment and, if medical interventions are deemed medically appropriate, an extensive informed consent process before such interventions are provided.

6. In my practice, I regularly communicate with practitioners who treat adolescents with gender dysphoria. The assessment and informed consent process that we utilize at the Duke Gender Care Clinic is comparable to the processes used at gender clinics across the country. Practices that forego assessments and informed consent fall outside the recommended guidelines for care.

7. It is not the case that we encourage any patient to initiate gender-affirming care as some of the Defendants' experts suggest. Consistent with the WPATH SOC and the Endocrine Society Guideline, each patient is met first by providers who explore the patient's medical and mental health history and identity. Under these guidelines, no patient is rushed into medical

treatment, and no treatment is initiated without appropriate evaluation and an informed consent process. Gender clinics use a multidisciplinary team approach and thus the decision to initiate treatment is made by a team including the providers, the patient and their parents with informed consent.

8. It appears to be the position of the Defendants' experts that waiting until a patient turns 18 years of age before initiating medical treatment for gender dysphoria would not cause harm to minor patients. This is wrong. Many physiological changes that happen during endogenous puberty cause severe distress for patients with gender dysphoria and can be difficult, if not impossible, to reverse with subsequent treatment. Based on my clinical experience, patients with severe dysphoria who are able to receive treatment prior to age 18 experience substantial mental health improvements from gender-affirming medical interventions.¹

9. Defendants' experts attempt to discredit WPATH by referring to it as an advocacy organization. (*See, e.g.*, Laidlaw ¶ 176). This critique is also misplaced. Like many medical associations, WPATH both advocates for patients and pursues rigorous scientific research. This is not a new phenomenon in medicine. The American Diabetes Association, for example, is a professional association that both advocates for patients with diabetes and is a scientific organization. Additionally, rigorous papers are presented at the WPATH meetings and well-

¹ Lane, A., & Wilson, T. A. (2020). Longitudinal impact of gender-affirming endocrine intervention on the mental health and well-being of transgender youths: Preliminary results. *International Journal of Pediatric Endocrinology*, 2020(1). <https://doi.org/10.1186/s13633-020-00078-2>; llen, L. R., Watson, L. B., Egan, A. M., & Moser, C. N. (2019). Well-being and suicidality among transgender youth after gender-affirming hormones. *Clinical Practice in Pediatric Psychology*, 7(3), 302–311. <https://doi.org/10.1037/cpp0000288>; Becker I, Auer M, Barkmann C, Fuss J, Möller B, Nieder TO, Fahrenkrug S, Hildebrandt T, Richter-Appelt H. A Cross-Sectional Multicenter Study of Multidimensional Body Image in Adolescents and Adults with Gender Dysphoria Before and After Transition-Related Medical Interventions. *Arch Sex Behav*. 2018 Nov;47(8):2335-2347. doi: 10.1007/s10508-018-1278-4. Epub 2018 Aug 7. PMID: 30088234.

funded scientific research is reported on. This is also not unusual within medicine. For example, the American Heart Association has scientific meetings, community engagement and advocacy arms.

SAFETY AND EFFICACY OF TREATMENTS

Safety and Efficacy of Puberty Blockers

10. Puberty blockers have been used to treat patients with gender dysphoria since at least 2004 in the United States. We have more than 20 years of data showing the safety and efficacy of this treatment for patients with gender dysphoria collected from research conducted around the world. We have over 30 years of data about the safety of this treatment based on data from treating children with precocious puberty. It is therefore not accurate to suggest that little is known about the effects of puberty blockers.²

11. Though Defendants' experts warn about delaying puberty, the use of puberty blockers in transgender adolescents does not delay puberty beyond the typical age range. Pubertal development has a very wide age variation among individuals. Puberty in individuals assigned male at birth typically begins anywhere from age nine to age fourteen, and sometimes does not complete until a person's early twenties. For those individuals assigned female at birth, puberty typically occurs sometime within the ages of eight to 17, generally beginning between the ages of eight and 12. Protocols used to treat adolescents with gender dysphoria would tend to put them in the latter third of typical pubertal age ranges but nothing outside of the typical range.³ Though

² Federica, et al. Management of Endocrine Disease: Long-term outcomes of the treatment of central precocious puberty. *European Journal of Endocrinology*. 2016; 174(3): R79–R87. doi: <https://doi.org/10.1530/EJE-15-0590>.

³ Hembree, W.C., Cohen-Kettenis, P.T., Gooren, L., et al. Endocrine Treatment of Gender-Dysphoric/Gender-Incongruent Persons: An Endocrine Society Clinical Practice Guideline. *The Journal of Clinical Endocrinology & Metabolism*. 2017; 102(11): 3869-903; Euling, S.Y., Herman-Giddens, M.E., Lee, P.A., et al. Examination of U.S. Puberty-Timing Data from 1940 to

some peers of a patient on puberty blockers to treat gender dysphoria may undergo pubertal changes earlier than the gender dysphoric patient, many peers will have comparably timed or later puberty. In fact, one of the reasons WPATH SOC 8 has eliminated strict age guidelines for hormone therapy was so that patients moving from puberty blockers to hormones could have an individualized assessment about when initiating puberty is appropriate—with one consideration being the need to time puberty in the range of a patient’s peers. There is no data to support the assumption of Defendants’ witnesses that delaying puberty within these normal age ranges will have negative short- or long-term social and developmental consequences.

12. In my clinical experience, puberty blockers can be an essential tool to improve the health and well-being of some transgender adolescents with gender dysphoria. Where medically indicated, puberty blockers effectively prevent the worsening distress that is common among adolescents with gender dysphoria upon the onset of puberty. In addition to preventing this worsening distress, puberty blockers allow an adolescent and their family time to assess future treatment options. Accordingly, when the time comes for these patients to make a choice about stopping puberty blockers or going onto gender affirming hormones, they have had time to process with themselves, their parents, and their clinical team what their life will look like if they undergo the puberty that does not match their sex assigned at birth. This allows a thorough understanding of the benefits and potential side effects of this course of treatment. In my clinical experience, their mental health improves with lower levels of anxiety, improvement in depression, more interactivity at school and with their peers. Their school performance often improves as well due to the improvements in their mental health overall. Defendants’ experts suggest that initiating puberty blockers will lock patients into an unstoppable trajectory of

1994 for Secular Trends: Panel Findings. *Pediatrics*. 2008; 121 (Supplemental 3): S172-S191.

transition, but this is not how it works nor the goal of puberty blockers. The only thing paused is the patient's puberty, not the discussion of their needs or their continued identity exploration. During this time, there are ongoing conversations and assessments about the continuing need for treatment and the adolescents' needs, present and future, as they develop.

13. In their declarations, Defendants' experts claim that patients treated with puberty blockers will experience a range of health consequences. For example, Dr. Laidlaw says that patients treated with puberty blockers will be at an elevated risk of lower bone mineral density, and therefore "expected to be at future risk for osteoporosis and the potential for debilitating spine and hip fractures as adults." (Laidlaw ¶ 100). During the course of treatment, patients may have reduced bone mineral density relative to their peers who are progressing through puberty which naturally increases bone mineral density at a faster rate than the bone density accrual that occurs pre-puberty. The data available shows that most keep a stable density, but when compared to peers, who are adding more density, their Z scores (density compared to those of the same age and gender) are lower. There are a number of issues in this area that may lead to false comparisons as it is not clear which gender norm should be used. Many studies don't correct for bone age, pubertal stage, or height, all of which confound the DXA measurements. In addition, the studies available, even with these limitations, show that after two to three years on gender affirming hormone therapy (or in their endogenous puberty), the patient's bone structure and strength increases.⁴ Additionally, studies have shown no changes in bone mineralization among

⁴ Some transgender women do not return to their baseline before treatment within this short window. However, their baseline bone densities are frequently low to start. The cause of this is not clear. Some scientists suspect it has to do with a decreased level of activity seen in transgender women in general. This has been shown in research and also has been my experience with patients. *See* van der Loos, M.A., Hellinga, I., Vlot, M.C., et al. Development of Hip Bone Geometry During Gender-Affirming Hormone Therapy in Transgender Adolescents Resembles That of the Experienced Gender When Pubertal Suspension Is Started in Early Puberty. *Journal of Bone and Mineral Research*. 2021; 36(5): 931-41. doi: <https://doi.org/10.1002/jbmr.4262>; Schagen SEE,

patients with central precocious puberty treated with puberty blockers for a period of three years.⁵

Dr. Laidlaw raises the issue of risk of fracture later in life, but we have been using puberty blockers to treat patients with precocious puberty for over 30 years and have not observed these long-term effects. (Laidlaw ¶¶ 100, 107). As with all of the risks of puberty blockers, the risks related to bone mineralization and the state of the evidence are discussed with patients and their parents during the informed consent process and are weighed against the risks of not providing treatment.

14. With respect to Dr. Cantor's claim about weight gain (Cantor ¶ 221), there is no consistency in the data on weight gain or loss in transgender patients and, in my clinical experience, these outcomes most often relate to factors such as socioeconomic status, ability to participate in sports, and living in a food desert, as opposed to their hormonal status. This correlates with findings in my cisgender patients as well. I have observed much more significant

Wouters FM, Cohen-Kettenis PT, Gooren LJ, Hannema SE. Bone Development in Transgender Adolescents Treated With GnRH Analogues and Subsequent Gender-Affirming Hormones. *J Clin Endocrinol Metab.* 2020 Dec 1;105(12):e4252–63. doi: 10.1210/clinem/dgaa604. PMID: 32909025; PMCID: PMC7524308.

Dr. Cantor repeatedly cites a study by Klink that reported some reduction in bone density at age 22 among 15 transgender women treated with blockers during adolescence. (See, e.g., Cantor ¶¶ 90, 217). But the authors concluded that “[t]he contribution of GnRHa treatment is at best tentative,” as they noted other factors that could explain the results, such as lower bone density among the transgender women before commencement of treatment, possibly due to their discomfort engaging in sports. Klink, D., Caris, M., Heijboer, A., et al. Bone Mass in Young Adulthood Following Gonadotropin-Releasing Hormone Analog Treatment and Cross-Sex Hormone Treatment in Adolescents With Gender Dysphoria, *The Journal of Clinical Endocrinology & Metabolism.* 2015; 100(2): E270-E275, at E274. doi: <https://doi.org/10.1210/jc.2014-2439>.

⁵ Park, H.K., Lee, H.S., Ko, J.H., et al. The effect of gonadotrophin-releasing hormone agonist treatment over 3 years on bone mineral density and body composition in girls with central precocious puberty. *Clinical Endocrinology.* 2012; 77(5): 743-48.

weight gain in patients on certain antidepressants such as aripiprazole compared to patients being treated with hormones.

15. Additionally, Dr. Cantor suggests that patients on puberty blockers will have slower rates of growth in height. (Cantor ¶ 215). Their rate is normal for those not in puberty. For transgender girls, there is some overall reduced height growth, but the reduced height is both consistent with the gender-affirmation aspect of the care (*i.e.*, a transgender girl's treatment will aim to align her physiological characteristics, including height, consistent with what is typical for girls generally) and still within the expected overall range for the patient's height based their mid-parental average. For transgender boys, puberty blockers would lead to increased height growth, which is likewise consistent with the gender-affirmation aspect of the care and also still within the expected overall range for what their adult height would be.

16. Defendants' experts' claim that brain development occurring during puberty may be negatively affected by puberty blockers is not accurate. (*See, e.g.*, Cantor ¶¶ 211, 237; Laidlaw ¶ 108). Patients with gender dysphoria who are treated with puberty blockers undergo hormonal puberty with all the same brain and other development.⁶ There is no research suggesting that

⁶ Staphorsius, A. S., Kreukels, B. P., Cohen-Kettenis, P. T., et al. Puberty suppression and executive functioning: An fMRI-study in adolescents with gender dysphoria. *Psychoneuroendocrinology*. 2015; 56: 190-99. doi: <https://doi.org/10.1016/j.psyneuen.2015.03.007>; Schneider MA, Spritzer PM, Soll BMB, Fontanari AMV, Carneiro M, Tovar-Moll F, Costa AB, da Silva DC, Schwarz K, Anes M, Tramontina S and Lobato MIR (2017) Brain Maturation, Cognition and Voice Pattern in a Gender Dysphoria Case under Pubertal Suppression. *Front. Hum. Neurosci.* 11:528. doi: 10.3389/fnhum.2017.00528; Nienke M. Nota, Baudewijntje P.C. Kreukels, Martin den Heijer, Dick J. Veltman, Peggy T. Cohen-Kettenis, Sarah M. Burke, Julie Bakker, Brain functional connectivity patterns in children and adolescents with gender dysphoria: Sex-atypical or not?, *Psychoneuroendocrinology*, Volume 86, 2017, Pages 187-195, ISSN 0306-4530, <https://doi.org/10.1016/j.psyneuen.2017.09.014>.

treatment has negative impact on brain development or executive functioning and I have not seen this in my practice at all.

17. Defendants' experts' claim is inaccurate for the additional reason that some people never go through hormonal puberty, such as patients with Turner Syndrome, and still have normal brain development with respect to cognition and executive function. Dr. Laidlaw also seems to imply that youth with gender dysphoria have their puberty delayed beyond the typical age range, *see Laidlaw ¶¶ 110-11*, but, as I discussed above, this is not accurate. He also implies that gender dysphoric youth treated with puberty blockers remain on them longer than those treated for precocious puberty. This is also not accurate. The longest my patients with gender dysphoria are treated with puberty blockers before the introduction of pubertal hormones is around three years. By contrast, many patients with precocious puberty are treated with puberty blockers for five to seven years.

Safety and Efficacy of Hormone Therapy

18. Hormone therapy is safe, effective, and essential for the well-being of many transgender adolescents. For example, boys who are transgender treated with puberty blockers and gender affirming hormones will receive the same amount of testosterone during puberty that non-transgender boys generate with their testes. They will grow darker and thicker facial and body hair, experience fat distribution away from the hips, have decreased breast growth, and develop lower vocal pitch. Likewise, girls who are transgender and treated with puberty blockers and gender affirming hormones will receive the same amount of estrogen during puberty that non-transgender girls generate endogenously. They will develop breast tissue, fat will be distributed to their hips, their skin will soften, and their vocal pitch will not deepen further. My

patients who receive medically appropriate hormone therapy and who are treated consistent with their gender identity in all aspects of life experience significant improvement in their health.

19. Dr. Laidlaw repeats this same wordplay tactic in describing the administration of testosterone as inducing *hyperandrogenism* in transgender men (Laidlaw ¶¶ 127-144), and administration of estrogen as inducing *hyperestrogenemia* in transgender women (Laidlaw ¶¶ 145-154). But when testosterone is prescribed for gender dysphoria (as for some of the transgender male plaintiffs), the goal is to achieve a normal male testosterone level based on age, meaning a testosterone level that is consistent with the normal testosterone levels for cisgender males of similar age. And when estrogen is prescribed for gender dysphoria as it is for transgender females, the goal is to achieve a normal female estrogen level based on age, meaning an estrogen level that is consistent with the normal estrogen levels for cisgender females of similar age. These goals mirror what Dr. Laidlaw or any other endocrinologist would aim for when treating low testosterone or ovarian failure.

20. Dr. Laidlaw claims that some side effects from these hormone treatments can't be undone. While that is true for a few things like voice change in transgender men, his claims are exaggerated for some of them. For example, as an endocrinologist, I routinely treat cisgender women with higher testosterone levels most commonly but not exclusively limited to those with polycystic ovary syndrome. I use oral and topical medications to decrease the growth of facial hair and acne routinely. In fact, I use the same medication for these cisgender women as I use for transgender women to decrease their facial and body hair. With regular use of the medications along with hair removal techniques routinely performed at local spas and medical facilities such as laser hair removal and electrolysis, the hair and acne can be easily reversed. Typically, once the testosterone levels are back to cisgender female normal ranges, either by stopping testosterone

in transgender men, or using these medications in cisgender women, the hair does not regrow. In my experience, the cholesterol effects of testosterone are very mild. The research supports this as well. In general, if a person has a strong family history of elevated cholesterol, then occasionally I have encountered that their cholesterol is affected by the testosterone. In the approximately 400 transgender men that I have treated over the last 10 years, I have only had to use cholesterol lowering medications in approximately three individuals. All had a strong family history of early heart attack and had elevated cholesterol prior to starting treatment. Having seen an endocrinologist early in life and having this recognized and addressed with medication and lifestyle management will likely prevent them from developing the heart disease they would have if it was recognized much later or never as these are not typically recognized or addressed in adults until their 40's or 50's when it would have been too late to avoid the consequences. In other words, early and ongoing specialist care can track and resolve symptoms that would have been there otherwise but would have gone addressed until potentially adulthood. As for bone mineral density, testosterone has been shown to improve the bone mineral density in transgender and cisgender men. This makes sense since estrogen is the primary driver of bone mineral accrual in all persons. For men and transgender men on testosterone, the mechanism is via aromatization of the testosterone to estrogen.

21. With regard to Dr. Laidlaw's discussion of estrogen, certainly estrogen gives a person softer skin, but not "thinner" skin and certainly not to the point of easier bruising as is suggested by his report. Thinner skin in post-menopausal women occurs due to the lack of estrogen. Women are not inherently more likely to bruise than men which is what is suggested here. Also, the addition of fat to the breast area is a desired effect of estrogen in transgender women. However, the primary effect of estrogen is an increase in the glandular tissues of the

breast. Per the medical literature and in my experience, there is not a significant effect in overall weight gain from estrogen. As we learn more about the effects on fertility of estrogen in transgender women, it appears that these effects may be temporary in a large proportion of trans women treated with estrogen. Pre-treatment fertility counseling is part of our standards of care so that all patients and their families are well informed of these risks and offered preservation options before any treatment is initiated.

22. When treating patients with hormones, we closely monitor dosing and circulating hormone levels to minimize any risk of adverse effects. This is true for patients with gender dysphoria and any other conditions requiring hormonal treatment. In the past, some of the estrogens used to treat patients did increase thrombovascular risks, but with current forms of medication and appropriate monitoring and dosing, we are not seeing these side effects. In addition, estradiol via patch has been used to treat cisgender men with prostate cancer and that use has not shown an increase in cardiovascular effects. For transgender men treated with testosterone, it is uncommon to see red blood cell counts that are atypical for males, and data have not shown⁷ increased risk of cardiovascular disease for transgender men treated with testosterone.

23. Defendants' experts' claim that hormone therapy is harmful because adolescents receive, what they call, "high, supraphysiologic doses" of hormones. (See, e.g., Laidlaw, at 25 n.11). But this is not accurate. Each patient is treated individually and their hormones are managed based on their physiological and clinical needs. The guidelines recommend that the hormone levels be kept in the normal physiologic range for their gender identity, not their sex

⁷ Wierckx K., Mueller, S., Van Caenegem, E., et al. Long-term evaluation of cross-sex hormone treatment in transsexual persons. *The Journal of Sexual Medicine*. 2012; 9(10): 2641-51. doi: <https://doi.org/10.1111/j.1743-6109.2012.02876.x>.

assigned at birth. The levels are thus in the physiologic range for their gender identity. ECF No. 112, pp. 12-13.

24. Defendants seem to suggest that hormone treatment is harmful because it leads to a “lifetime” of continuing to receive such therapy. (*See, e.g.*, Cantor ¶¶ 225; Laidlaw ¶ 55). For some patients this is not the case as they may undergo hormone treatment for a period of time and then discontinue the treatment if dysphoria is well-managed and the changes from the hormone therapy have adequately addressed the underlying dysphoria. For those who do remain on maintenance doses of hormone therapy for their lifetimes, the risks of ongoing hormone therapy can be well-managed and are not unlike risks associated with those present for other patients who undergo long-term hormone therapy for different conditions like hypothyroidism, Kleinfelter’s Syndrome, Turner Syndrome, patients who have to have their ovaries or testicles removed, as well as those with hypopituitarism. Many endocrine conditions are lifelong and require lifelong use of hormone replacement including hypothyroidism (congenital hypothyroidism requires treatment from birth to death), Type 1 diabetes, which requires insulin for life. Additionally, adrenal insufficiency is a lifelong condition whether its cause is a hereditary enzyme deficiency which presents at birth, or, an autoimmune condition, an infection or an injury (these present later in life). These patients require lifelong steroids. Ultimately, many conditions are treated with lifelong medical management – including hormone therapy – and that does not pose an inherent risk to patient health. In fact, the lifelong management improves patient health and extends life.

25. Defendants’ experts also discuss the fertility implications of gender-affirming care. (Laidlaw ¶¶ 155-156; Cantor ¶¶ 206-207; Thompson ¶ 65). The sweeping suggestion that hormone therapy compromises fertility for all patients is simply incorrect. Many transgender

individuals conceive children after undergoing hormone therapy.⁸ Pregnancy among trans men after undergoing testosterone therapy is not uncommon.⁹ A recent eight-year study found that four months after stopping testosterone treatment, transgender men had comparable egg yields to non-transgender women.¹⁰

26. Going directly from puberty blockers to gender-affirming hormones does affect fertility. For these patients, and any patients treated with estrogen, who are concerned about the impact of estrogen on fertility, fertility preservation remains an option.¹¹ Sperm preservation is safe and effective and has been used for decades. For transgender women, it may mean they have to wait to start puberty blockers until mid-puberty when sperm production has started. This can be done before many of the changes occur that cause lifelong dysphoria like voice change and tall stature. For transgender men, they will also have to wait until mid-puberty when eggs can be harvested. For those whose dysphoria is too severe to wait, pre pubertal ovarian and testicular tissue cryopreservation remains experimental and only done under research protocols that are carefully monitored. Many adolescent children, with their parents' consent, have decided to

⁸ Light A.D., Obedin-Maliver J., Sevelius J.M., et al. Transgender men who experienced pregnancy after female-to-male gender transitioning. *Obstetrics Gynecology*. 2014; 124(6): 1120-27; Maxwell S., Noyes N., Keefe D., Berkeley A.S., et al. Pregnancy Outcomes After Fertility Preservation in Transgender Men. *Obstetrics Gynecology*. 2017; 129(6):1031-34; Neblett M.F. & Hipp H.S. Fertility Considerations in Transgender Persons. *Endocrinology and Metabolism Clinics*. 2019; 48(2): 391-402.

⁹ See, e.g., Moseson, H., Fix, L., Hastings, J., et al. Pregnancy intentions and outcomes among transgender, nonbinary, and gender-expansive people assigned female or intersex at birth in the United States: Results from a national, quantitative survey. *International Journal of Transgender Health*. 2020; 22(1-2): 30-41. doi: <https://doi.org/10.1080/26895269.2020.1841058>.

¹⁰ Leung, A., Sakkas, D., Pang, S., et al. Assisted reproductive technology outcomes in female-to-male transgender patients compared with cisgender patients: a new frontier in reproductive medicine. *Fertility and Sterility*. 2019; 112(5): 858-65.

¹¹ Neblett, M. F., 2nd, & Hipp, H. S. (2019). Fertility Considerations in Transgender Persons. *Endocrinology and metabolism clinics of North America*, 48(2), 391-402. <https://doi.org/10.1016/j.ecl.2019.02.003>

participate in these clinical trials to have the possibility of future biologically related offspring prior to undergoing treatments (many unrelated to gender dysphoria) that could potentially adversely affect their future fertility. This is how science is conducted and how we advance our knowledge in the field and should not be suggested that because it is still in the “experimental” stage that it is causing any harm to the individuals. And to be clear, it is the fertility preservation technique that is experimental, not the gender-affirming medical care, which is well-established. The Association for Reproductive Medicine states that it is unethical to prevent access to these procedures based on marital status, sexual orientation, or gender identity.¹² More generally, many medical interventions necessary to preserve a person’s health and well-being can impact an individual’s fertility, but we proceed with the treatment after informed consent.

27. Defendants’ witnesses also critique an update to the WPATH SOC, which no longer sets more rigid age limitations around the initiation of hormone therapy. This allows for flexibility in caring for patients who have a need to access hormones earlier due to early puberty or earlier onset and severity of dysphoria. We still counsel families about the risks and benefits of the treatments and the limitations of data available for younger adolescents. Generally speaking, this is how the practice of medicine works - we use the best available evidence from research and clinical experience to tailor treatment for each individual.

28. Ultimately, in my clinical experience, gender-affirming medical care drastically improves the health and well-being of adolescents with gender dysphoria for whom the care is medically indicated. And contrary to the suggestions made by the Defendants’ experts, my clinical experience has shown that adolescents who access needed gender-affirming medical

¹² Ethics Committee of the American Society for Reproductive Medicine (2021). Access to fertility treatment irrespective of marital status, sexual orientation, or gender identity: an Ethics Committee opinion. *Fertility and sterility*, 116(2), 326–330. <https://doi.org/10.1016/j.fertnstert.2021.03.034>.

treatment have improved social and romantic relationships and are able to develop peer relationships with cisgender and transgender people alike.

29. For patients for whom these medical interventions are indicated, taking them off of their puberty blockers or their hormone therapy is likely to cause severe harms and no discernible benefits. The physical consequence to stopping GnRH (puberty blockers) in transgender patients can include permanent changes in the secondary sex characteristics which can lead to future severe and/or worsening dysphoria. An increase in dysphoria can increase depression, anxiety, self-harm, hospitalizations, and suicidality in transgender adolescents. These permanent changes can lead to future surgeries that would not have been required had the patient remained on treatment. These permanent changes can also make it more difficult for transgender adolescents to navigate society in both adolescence and adulthood as they can make it harder for them to be perceived as cisgender thereby increasing the potential for harassment and violence. I have personally witnessed the differences for my patients who are able to begin treatment early in puberty when compared to patients who undergo their endogenous puberty. Early intervention dramatically affects a patient's ability to "pass" as cisgender, which can have many practical and mental health benefits.

30. Titrating down hormone therapy can be done but is not medically recommended and is not consistent with my practice. It will lead to transgender individuals experiencing physiological changes in their bodies that are consistent with their assigned sex at birth, including but not limited to menstrual cycles, facial hair, body hair, change in body shape. These physiological changes will once again lead the individual back into dysphoria and worsen their mental health. And because adolescence is such a critical time with respect to these permanent

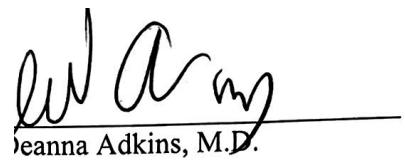
changes, even titrating down the hormone therapy to a non-therapeutic dose could lead to permanent physical changes that will affect a patient for their lifetime.

31. As the Director of a transgender health clinic in North Carolina, I see patients who live out-of-state, and I am acutely aware of the difficulties that families endure in accessing gender-affirming care, including long wait times and barriers associated with insurance and travel. The longer the patient is unable to access their medically necessary care, the worse their suffering will be. In addition, transgender youth are often wary of medical providers and can take longer to develop a therapeutic and trusting relationship with their provider. This change in providers can set them back in their care and can have lasting physical and mental health effects.

* * *

I declare under penalty of perjury that the foregoing is true and correct.

Executed on: July 7, 2023.



A handwritten signature in black ink, appearing to read "Leanna Adkins, M.D." followed by a horizontal line.